Draft Environmental Assessment

City of McAllen

Retiree Haven Stormwater Improvements

HMGP / DR-1780-TX PROJECT #7

Hidalgo County, Texas

September 2011

FEMA

Federal Emergency Management Agency
Department of Homeland Security
500 C Street, SW
Washington, DC 20472

TABLE OF CONTENTS

List of Tables

List of Figures

List of Appendices

List of Acronyms

APE	Area of potential effect
AST	Above-ground storage tank
BMPs	Best Management Practices
CO	Carbon monoxide
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CFS	Cubic Feet Per Second
CGP	Construction General Permit
CMP	Texas Coastal Management Program
CWA	Clean Water Act
DHHS	Department of Health and Human Services
EA	Environmental Assessment
EIS	Environmental Impact Statement
E.O.	Executive Order
EOR	Elements of Occurrence Records
EPA	Environmental Protection Agency
ERNS	Emergency Response Notification System
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FM	Farm-to-Market
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
GLO	Texas General Land Office
HMGP	Hazard Mitigation Grant Program
IBWC	International Boundary Water Commission
LF	Linear Feet
LRGV	Lower Rio Grande Valley
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act
NO_2	Nitrogen dioxide
NOI	Notice of Intent
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
O_3	Ozone
PM_{10}	Particulate matter (10 microns or less in diameter)
$PM_{2.5}$	Particulate matter (2.5 microns or less in diameter)
Pb	Lead
RCP	Reinforced Concrete Pipe
ROW	Right-of-Way
SAL	State Archeological Landmark
SH	State Highway
SHPO	State Historic Preservation Officer
SO_2	Sulfur dioxide
SW3P	Stormwater Pollution Prevention Plan

TAC	Texas Administrative Code
TARL	Texas Archeological Research Laboratory
TCEQ	Texas Commission on Environmental Quality
TDEM	Texas Division of Emergency Management
THC	Texas Historical Commission
TPDES	Texas Pollutant Discharge Elimination System
TPWD	Texas Parks and Wildlife Department
TWDB	Texas Water Development Board
TxDOT	Texas Department of Transportation
TxNDD	Texas Natural Diversity Database
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation

1.0 Introduction

The proposed project area is a 24-acre residential subdivision called Retiree Haven located in the Lower Rio Grande Valley (LRGV) primarily within the City of McAllen, Hidalgo County, Texas. The site is located approximately 0.25 mile south of Farm-to-Market (FM) 1016 (Military Highway) and on the west side of State Highway (SH) 336 (South 10th Street). Coordinates for the project are Latitude: 26.14788, Longitude: -98.23986. A Location Map is included as **Figure 1**.

The City of McAllen has applied to the Federal Emergency Management Agency (FEMA) through the Texas Division of Emergency Management (TDEM) for assistance with drainage improvements within the Retiree Haven Subdivision. FEMA is proposing to fund the project under the Hazard Mitigation Grant Program (HMGP), which provides grants to states and local governments after a major disaster declaration. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act.

This Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the President's Council on Environmental Quality (CEQ) regulations to implement NEPA (40 Code of Federal Regulations Parts 1500-1508), and FEMA's regulations implementing NEPA (44 CFR Part 10). FEMA is required to consider the potential environmental impacts before funding or approving actions and projects. The purpose of this EA is to analyze the potential social, economic and environmental impacts of the Retiree Haven Stormwater Improvements project. FEMA will use the findings in this EA to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

2.0 Purpose and Need

Purpose

Through HMGP, FEMA provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. Although HMGP funds are made available statewide under the Presidential Disaster Declaration DR-1780 for Hurricane Dolly, the State gave priority to applications from the sixteen (16) declared counties, including Hidalgo County. HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. The purpose of the proposed project is to alleviate flooding in the Retiree Haven Subdivision.

Need

Retiree Haven is a 24-acre residential subdivision established in the early 1970's. The subdivision, which has approximately 262 residents, has basic utility service (water, sewer, electricity, and cable) and paved roads, but lacks drainage infrastructure and a positive outfall. Stormwater runoff typically finds its way into low-lying areas (undeveloped residential lots) throughout the subdivision where it remains for extended periods. Drainage in this region is extremely limited due to lack of topographic relief, slow draining soils and the absence of natural watercourses. Due to these natural restrictions, manmade channels and/or stormwater pump stations are the only potential means of stormwater conveyance. This drainage basin is especially vulnerable to short duration, high intensity storm events that inundate flat, low-lying areas. The resulting floodwaters recede at slow rates. Stormwater drainage infrastructure improvements are needed to alleviate flooding within this residential community.

3.0 Alternatives

As part of early project planning, several criteria were evaluated to identify a practical alternative that would meet the project objectives and satisfy the project need. The following alternatives were studied.

3.1 No Action Alternative

Under the No Action Alternative, nothing would be done to alleviate flooding in the Retiree Haven community, which would leave the existing residents at risk for flooding during significant storm events.

3.2 Proposed Action (Pumped Outfall System)

This alternative would construct curb and gutter, a storm sewer network and related appurtenances, two stormwater detention ponds with a pumping station and an outfall force main system.

The north detention pond will be 0.216 acres at the bottom and 0.519 acres at the top. The banks are typically sloped at 5-horizontal:1-vertical. The total depth of the pond is four feet from the top of the bank to the bottom of the pond. The pond is triangular with a north-south length of approximately 200 feet and an east-west width of approximately 250 feet. The south detention pond is 0.272 acres at the bottom and 0.539 acres at the top. The banks are typically sloped at 5-horizontal:1-vertical. The total depth of pond is three feet from the top of the bank to the bottom of the pond. The pond is triangular with a north-south length of approximately 230 feet and an east-west width of approximately 260 feet. The combined capacity of the two ponds at the top of bank is 3.19 acre-feet.

The network of inlets and pipes in the subdivision will capture the runoff from storm events where it will be conveyed to either the northern or southern detention pond. Water from the northern detention pond will drain via pipe to the southern detention pond where the water will be transported to a pump station.

The project will require a license or permit from the International Boundary Water Commission (IBWC) for proposed activities crossing or encroaching upon the floodplains of IBWC flood control projects and rights-of-way. The applicant will obtain licenses or permits from the IBWC prior to construction and will comply with all licenses or permit conditions. The applicant will maintain documentation of compliance with any IBWC license or permit.

The proposed outfall for the stormwater force main system is the IBWC Main Floodway (identified as “Hackney Lake Inlet” on the U.S. Geological Survey (USGS) Topographic Map) located approximately 1,280 linear feet (lf) south of the subdivision. The project would include an 8-inch diameter force main that would be installed along the west side of the South 10th St. right-of-way (ROW). This force main would extend from a proposed pumping station to the IBWC’s Main Floodway. The force main would discharge on the south side of the IBWC levee, within the floodway, via a “bubble-up” structure that would be installed within the northern bank of the floodway. The design discharge for the main floodway is 105,000 cubic feet per second (cfs). The discharge from this project site is proposed to be 10.29 cfs, or one-ten thousandths

of a percent (0.01%) of the total flow within the floodway. This project will have no impact on the downstream discharge capacity.[1]

A proposed site plan is included as **Figure 2**. Photographs of the project area are shown in **Appendix A**.

Utility adjustments, driveway repairs and curb and gutter as well as sidewalk construction would also be a part of the proposed improvements. The storm sewer network will consist of the following materials:

- Approximately 3,485 lf of 24-in Reinforced Concrete Pipe (RCP)
- Approximately 1,380 lf of 30-inch RCP
- Approximately 3,200 lf of 36-inch RCP
- Approximately 1,400 lf of 42-inch RCP
- Approximately 800 lf of 48-inch RCP
- Approximately 1,280 lf of 8-inch force main outfall pipe
- Inlets and Junction Boxes
- Stormwater pump

3.3 Alternatives Considered but Dismissed

Another option that was considered, but dismissed, called for providing significant stormwater retention facilities within the drainage basin. This option would eliminate the need for a pumped outfall system. This alternative was not considered feasible for the following reasons:

- There is insufficient area available within the basin to construct a stormwater management facility of sufficient capacity to fully retain the necessary stormwater runoff. Therefore, the combination of a small on-site detention facility with a pump and force main outfall system is necessary.
- Due to the lack of topographic relief within the basin, the creation of a gravity outfall for this area is not physically practical.

[1] Source: Response to FEMA RFI#1, letter dated December 1, 2009, Engineering Technical Review Comment #8.

4.0 Affected Environment and Potential Impacts

4.1 Physical Resources

4.1.1 Geology and Soils

According to the 1976 Geologic Atlas of Texas, McAllen-Brownsville Sheet (TWDB 2011), the project is located over an area mapped as floodplain deposits over the lower course of the Rio Grande, dominantly mud (Qam).

According to the 1963 (Photorevised 1983) USGS Topographic Map, Pharr Quadrangle (**Figure 3**), the surface elevation in the project area is relatively flat at approximately 92 feet above mean sea level (amsl).

According to the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey, soils underlying 85 percent of the project are primarily mapped as Runn silty clay (Map Unit 64). This soil type occurs on delta plains, and its parent material consists of calcareous silty alluvium. The natural drainage class is moderately well drained (USDA/NRCS 2011). The remaining 15 percent are unnamed, minor components and "Levee," which is a miscellaneous area.

The Farmland Protection Policy Act (FPPA) states that federal agencies must "minimize the extent to which federal programs contribute to the unnecessary conversion of farmland to nonagricultural uses…" Runn soils, which are mapped across 85 percent of the project area, are considered prime farmland soils (USDA/NRCS 2011).

No Action Alternative – Under the No Action Alternative, no construction would occur and there would be no impacts to geology or soils.

Proposed Action Alternative – Under the Proposed Action Alternative, construction activities would not be deep enough to impact underlying geologic resources in the short- or long-term. During construction, soils would be excavated and disturbed within proposed infrastructure footprints; however, these occur in areas that have been previously-converted to residential and transportation uses. No areas with current or planned farm uses would be affected.

Measures to mitigate soil disturbances will include standard erosion control measures to prevent sediment loading of surface waters (See description of mitigation measures under **Section 4.2.1 - Water Quality**). Excavated soil and waste materials will be managed and disposed of in accordance with applicable local, state, and federal regulations. If contaminated materials are discovered during the construction activities, the work must cease until the appropriate procedures can be implemented and permits obtained.

A letter requesting project review was sent to the NRCS on April 1, 2011. In a response letter dated April 7, 2011, the agency states that "The soils at the proposed site may contain Important Farmland Soils; however, by the description of the area that describes service to the residential community, the work area has been previously converted to urban uses. The FPPA excludes from the definition of "Farmland" areas that have been previously converted to urban uses." The agency completed a Farmland Conversion Impact Rating (Form AD-1006) indicating the exemption. Therefore, the Proposed Action will have no effect on prime or unique farmland or farmland of statewide importance.

4.1.2 Air Quality

Federal and state air regulations are designed to ensure that ambient air quality, including background, existing, and new sources, are in compliance with regulatory standards. The Environmental Protection Agency (EPA) has designated all areas of the United States as "attainment" (a geographic area that meets or does better than the national ambient air quality standard), "non-attainment" (an area that does not meet this standard), or "unclassified" with respect to ambient air quality standards. The criteria pollutants regulated by the EPA are ozone (O_3), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), particulate matter having an aerodynamic diameter of 10 microns or less (PM_{10}), particulate matter having an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$), and lead (Pb). The EPA has established National Ambient Air Quality Standards (NAAQS) for these seven pollutants. The National NAAQS were set at levels the EPA believed were necessary to protect human health (primary standards) and human welfare (secondary standards).

Pursuant to the Federal Clean Air Act, the general conformity rule (40 CFR Part 51) was created to ensure that actions by the federal government will neither cause nor aggravate a violation in air quality standards, nor delay timely attainment of standards. General conformity aims to prevent federally-funded projects from jeopardizing a state's ability to achieve air quality standards. The rules apply in areas of the state designated as not meeting federal air quality standards (nonattainment areas) or in areas which have a history of nonattainment, but are currently meeting the standards (maintenance areas). The proposed project is in Hidalgo County, which is currently classified as "in attainment," therefore, conformity does not apply. This project will not violate any implementation plan for Hidalgo County.

No Action Alternative – Under the No Action Alternative, no construction would occur and there would be no impacts to air quality.

Proposed Action Alternative – The proposed project could result in intermittent, short-term, fugitive emissions. These emissions would include dust from soil disruption and combustion emissions from construction equipment. Emissions from construction are not expected to cause or contribute to a violation of an applicable ambient air quality standard since construction equipment would be operated on an as-needed basis, primarily during daylight hours, and on a temporary basis. Long-term impacts to air quality are not anticipated to result.

To mitigate anticipated short-term impacts to local air quality, construction contractors will be required to water down construction areas to control dust when necessary. Fuel-burning equipment running times will be kept to a minimum and engines will be properly maintained.

A letter requesting project review was sent to the Texas Commission on Environmental Quality (TCEQ) Office of Policy and Regulatory Development on April 1, 2011. In a response letter dated April 11, 2011, the agency stated that a "review of the project for General Conformity impact in accordance with 40 CFR Part 93 and Title 30, Texas Administrative Code (TAC) § 101.30 indicates that the proposed action is located in the City of McAllen, Hidalgo County, which is currently unclassified or in attainment of the NAAQS for all six criteria air pollutants. Therefore, general conformity does not apply." The agency further states that "although any demolition, construction, rehabilitation or repair project will produce dust and particulate emissions, these actions should pose no significant impact upon air quality standards."

4.2 Water Resources

4.2.1 Water Quality

Groundwater

The project is not located in an area with designated sole source aquifers or aquifer recharge areas. The project is located over the Gulf Coast Aquifer, which spans the Texas Coast and is not a drinking water source for the LRGV. The LRGV region depends almost entirely on surface water from the Rio Grande.

Surface Water

Other than the man-made irrigation channel located at the southern project limit (forms the Main Floodway's northern boundary), no surface waters are located in the project area. The TCEQ conducts Section 401 certification reviews of projects that require a Section 404 permit from the U.S. Army Corps of Engineers (USACE) for the discharge of dredged or fill material into waters of the U.S., including wetlands. The purpose of these certification reviews is to determine whether a proposed discharge will comply with state water quality standards. Since no potential waters of the U.S. would be impacted, a Section 401 certification would not be required.

Based on the TCEQ's Draft 2010 Texas 303(d) List (February 5, 2010) (TCEQ 2011), the project is located approximately 2.6 miles upstream of the Arroyo Colorado (Segment ID 2202), various parts of which are impaired due to "bacteria," "mercury in edible tissue," and "PCBs in edible tissue."

No Action Alternative – Under the No Action Alternative, no construction would occur and there would be no potential impacts to water quality.

Proposed Action Alternative – The proposed project has the potential to affect surface water quality by introducing excess sediment loading due to construction site runoff (short-term impact). No long-term impacts to water quality are anticipated. The project is not expected to result in further impairment of the TCEQ-designated Stream Segment 2202.

To mitigate possible water quality impacts, prior to construction, the City of McAllen will prepare a Stormwater Pollution Prevention Plan (SW3P) and comply with the TCEQ's Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit (CGP). A Notice of Intent (NOI) will be required. The SW3P will include appropriate control measures (i.e., Best Management Practices [BMPs]) including erosion and sedimentation controls that will be implemented as part of the construction activity to control pollutants in stormwater discharges. Excavated soil and waste materials will be managed and disposed of in accordance with applicable local, state, and federal regulations. If contaminated materials are discovered during the construction activities, the work must cease until the appropriate procedures can be implemented and permits obtained.

A letter requesting project review was sent to the TCEQ Office of Policy and Regulatory Development on April 1, 2011. In a response letter dated April 11, 2011, the agency recommended that "the environmental assessment address actions that will be taken to

prevent surface and groundwater contamination." These measures are summarized in the preceding paragraph.

4.2.2 Waters of the U.S. and Wetlands

Under Section 404 of the Clean Water Act (CWA), the USACE administers a permit program that regulates the discharge of dredge and fill materials into the waters of the U.S., including wetlands. The USACE regulates construction activities in order to protect navigation, utilization, and for the public interest of water resources. Waters of the U.S. are defined as:

- The traditional "navigable water of the United States" including adjacent wetlands;
- All interstate waters including interstate wetlands;
- All other waters such as interstate lakes, rivers, streams (including intermittent streams);
- Prairie potholes, mudflats, playa lakes, etc.;
- All impoundments of these waters;
- Tributaries of the above listed waters;
- Wetlands adjacent to the above waters; and
- Arroyos.

In addition, Executive Order (E.O.) 11990 (Protection of Wetlands) is an order given by President Carter in 1977 to avoid the adverse impacts associated with the destruction or modification of wetlands. The purpose of E.O. 11990 is to "minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands". To meet these objectives, the E.O. requires federal agencies, in planning their actions, to consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided.

Based on review of the 1989 USFWS National Wetland Inventory (NWI) Map - Pharr, Tex. Quadrangle, one surface water feature is mapped at the southern project limit, associated with an irrigation channel (**Figure 4**). This feature is labeled: Palustrine (P), Unconsolidated Shore (US), Seasonally Flooded (C), excavated (x).

No Action Alternative – Impacts from a No Action alternative are identical to the Proposed Action Alternative with regard to impacts to waters of the U.S. and Wetlands (none will be impacted).

Proposed Action Alternative – According to the Capital Projects Engineer for the City of McAllen, the feature identified on the NWI map as PUSCx will not be crossed. The proposed improvements will be located adjacent and upland of this feature (inside the adjacent roadway ROW). Therefore, no discharge will occur in this feature and permitting/concurrence from the USACE is not applicable. This alternative would result in no long-term impacts to waters of the U.S. (including wetlands) since none would be crossed. To mitigate short-term impacts to wetlands during project installation, the applicant must ensure that BMPs are implemented to prevent erosion and sedimentation to surrounding, nearby or adjacent wetlands. This includes equipment storage and staging of construction to prevent erosion and sedimentation to ensure that wetlands are not adversely impacted per the Clean Water Act and Executive Order 11990.

Should work be conducted within this wetland, the applicant must ensure that there is no net loss of wetlands. Under EO11990 (Protection of Wetlands); the applicant is responsible for coordinating with and obtaining any required Section 404 Permit(s) from the USACE prior to initiating work. The applicant shall comply with all conditions of the required permit. All coordination pertaining to these activities should be documented and copies forwarded to the state and FEMA as part of the permanent project files.

Comments were solicited from the USACE Galveston District Regulatory Branch via written correspondence dated April 1, 2011 (**Appendix B**). A response has not been received. The City of McAllen will coordinate directly with the responsible irrigation district (if applicable) for any permits required by that entity prior to disturbing the irrigation channel at the southern project limits.

4.2.3 Floodplains

E.O. 11988 regarding "Floodplain Management" requires federal agencies to avoid actions, to the extent practicable, that will result in the location of facilities in floodplains and/or affect floodplain values. According to the FEMA Flood Insurance Rate Map (FIRM) Community Panel No. 480334 0400C, dated November 16, 1982, the project area is situated in "Zone B." The southern extent at the proposed outfall location would enter the IBWC's Main Floodway, which is designated as Zone A (special flood hazard areas inundated by 100-year flood, where no base flood elevations determined). Floodplains are shown in **Figure 4.**

No Action Alternative - Under the No Action Alternative, no construction would occur and there would be no potential impacts to the mapped floodplain at the southern project extent (proposed outfall location).

Proposed Action Alternative – Although a mapped floodplain is located at the southern project extent, the project would not result in considerable changes to flood levels. This project has been designed in accordance with accepted floodplain management practices, and is intended to provide a positive benefit to local drainage.

Mitigation measures to avoid impacts to the mapped floodplain associated with IBWC's Main Floodway would include avoiding the placement of construction and equipment staging areas within this mapped floodplain. The applicant must coordinate with the local floodplain administrator and obtain required permits prior to initiating work. All coordination pertaining to these activities and applicant compliance with any conditions should be documented and copies forwarded to the state and FEMA for inclusion in the permanent project files. The applicant is responsible for providing the public with the finding and explanation of any final decision that the floodplain is the only practicable alternative at least 15 days prior to initiating the work. This notification should be documented and copies forwarded to the state and FEMA for inclusion in the permanent project files.

Comments were solicited from the FEMA Region VI Floodplain Management and Insurance Branch via written correspondence dated April 1, 2011 (**Appendix B**). On May 24, 2011 Donetta Walsh, Natural Hazards Program Specialist, replied suggesting that the project be coordinated with the local floodplain administrator, Ms. Yvette Barrera.

In compliance with E.O. 11988, an 8-step review was conducted for the Proposed Action and is included as **Appendix C**.

4.3 Coastal Resources

The Texas Coastal Management Program (CMP) manages Texas' coastal natural resource areas. The CMP is administered by the Coastal Coordination Council, which is chaired by the Commissioner of the Texas General Land Office (GLO). Review of the Texas Coastal Zone Map indicates that within the LRGV, the Texas Coastal Zone bisects Willacy and Cameron Counties, but does not extend west into Hidalgo County. Therefore, the proposed project does not lie within the boundaries of the Texas Coastal Zone as delineated by the CMP.

No Action Alternative – Under the No Action Alternative, no construction would occur and there would be no impacts to coastal resources.

Proposed Action Alternative – This alternative would have no effect on coastal resources since the proposed project does not lie within the boundaries of the Texas Coastal Zone as delineated by the CMP.

No mitigation measures are proposed for coastal resources.

Comments were solicited from the Texas CMP via written correspondence dated April 1, 2011 (**Appendix B**). A response has not been received.

4.4 Biological Resources

4.4.1 Threatened and Endangered Species and Critical Habitat

Threatened and Endangered Species

The table below summarizes species which are listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) or the Texas Parks and Wildlife Department (TPWD), their federal/state status, and project effect. Each of these species is considered by these agencies as having the potential to occur in Hidalgo County.

Table 1. Rare, Threatened, and Endangered Species of Hidalgo County

Common Name	Scientific Name	Federal Status	State Status	Habitat Present On-site?	Effect / Impact?
AMPHIBIANS					
Black-spotted newt	*Notophthalmus meridionalis*		T	Possible	Possible
Can be found in wet or sometimes wet areas, such as arroyos, canals, ditches, or even shallow depressions; aestivates in the ground during dry periods; Gulf Coastal Plain south of the San Antonio River.					
Mexican treefrog	*Smilisca baudinii*		T	Possible	Possible
Subtropical region of extreme southern Texas; breeds May-October coinciding with rainfall, eggs laid in temporary rain pools.					
Sheep frog	*Hypopachus variolosus*		T	No	No
Predominantly grassland and savanna; moist sites in arid areas.					

Common Name	Scientific Name	Federal Status	State Status	Habitat Present On-site?	Effect / Impact?
South Texas siren (large form)	*Siren sp 1*		T		
Wet or sometimes wet areas, such as arroyos, canals, ditches, or even shallow depressions; aestivates in the ground during dry periods, but does require some moisture to remain; southern Texas south of Balcones Escarpment; breeds February-June.				Possible	Possible
White-lipped frog	*Leptodactylus fragilis*		T		
Grasslands, cultivated fields, roadside ditches, and a wide variety of other habitats; often hides under rocks or in burrows under clumps of grass; species requirements incompatible with widespread habitat alteration and pesticide use in south Texas.				Possible	Possible
BIRDS					
Brown Pelican	*Pelecanus occidentalis*	DL	E		
Largely coastal and near shore areas, where it roosts and nests on islands and spoil banks.				No	No
Cactus Ferruginous Pygmy-Owl	*Glaucidium brasilianum cactorum*		T		
Riparian trees, brush, palm, and mesquite thickets; during day also roosts in small caves and recesses on slopes of low hills; breeding April to June.				No	No
Common Black-Hawk	*Buteogallus anthracinus*		T		
Cottonwood-lined rivers and streams; willow tree groves on the lower Rio Grande floodplain; formerly bred in south Texas.				No	No
Eskimo Curlew	*Numenius borealis*	LE	E		
Historic; nonbreeding: grasslands, pastures, plowed fields, and less frequently, marshes and mudflats.				No	No
Gray Hawk	*Asturina nitida*		T		
Locally and irregularly along U.S.-Mexico border; mature riparian woodlands and nearby semiarid mesquite and scrub grasslands; breeding range formerly extended north to southernmost Rio Grande floodplain of Texas.				No	No
Interior Least Tern	*Sterna antillarum athalassos*	LE	E		
Subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc.); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony.				No	No
Northern Aplomado Falcon	*Falco femoralis septentrionalis*	LE	E		
Open country, especially savanna and open woodland, and sometimes in very barren areas; grassy plains and valleys with scattered mesquite, yucca, and cactus; nests in old stick nests of other bird species.				No	No
Northern Beardless-Tyrannulet	*Camptostoma imberbe*		T		
Mesquite woodlands; near Rio Grande frequents cottonwood, willow, elm, and great leadtree; breeding April to July.				No	No
Peregrine Falcon	*Falco peregrinus*	DL	T	No	No

Common Name	Scientific Name	Federal Status	State Status	Habitat Present On-site?	Effect / Impact?
Both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (*F. p. anatum*) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, *F.p. tundrius* is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat.					
Piping Plover	*Charadrius melodus*	LT	T	No	No
Wintering migrant along the Texas Gulf Coast; beaches and bayside mud or salt flats.					
Reddish Egret	*Egretta rufescens*		T	No	No
Resident of the Texas Gulf Coast; brackish marshes and shallow salt ponds and tidal flats; nests on ground or in trees or bushes, on dry coastal islands in brushy thickets of yucca and prickly pear.					
Rose-throated Becard	*Pachyramphus aglaiae*		T	No	No
Riparian trees, woodlands, open forest, scrub, and mangroves; breeding April to July.					
Sooty Tern	*Sterna fuscata*		T	No	No
Predominately 'on the wing'; does not dive, but snatches small fish and squid with bill as it flies or hovers over water; breeding April-July.					
Sprague's Pipit	*Anthus spragueii*	C		No	No
Only in Texas during migration and winter, mid-September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges.					
Texas Botteri's Sparrow	*Aimophila botterii texana*		T	No	No
Grassland and short-grass plains with scattered bushes or shrubs, sagebrush, mesquite, or yucca; nests on ground of low clump of grasses.					
Tropical Parula	*Parula pitiayumi*		T	No	No
Dense or open woods, undergrowth, brush, and trees along edges of rivers and resacas; breeding April to July					
White-faced Ibis	*Plegadis chihi*		T	No	No
Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats					
White-tailed Hawk	*Buteo albicaudatus*		T	No	No
Near coast on prairies, cordgrass flats, and scrub-live oak; further inland on prairies, mesquite and oak savannas, and mixed savanna-chaparral; breeding March-May					
Wood Stork	*Mycteria americana*		T	No	No
Forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960					

Common Name	Scientific Name	Federal Status	State Status	Habitat Present On-site?	Effect / Impact?
Zone-tailed Hawk	*Buteo albonotatus*		T		
arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions				No	No
FISH					
Mexican goby	*Ctenogobius claytonii*		T	No	No
Southern coastal area; brackish and freshwater coastal streams					
Opossum pipefish	*Microphis brachyurus*	m	T	No	No
brooding adults found in fresh or low salinity waters and young move or are carried into more saline waters after birth; southern coastal areas					
River goby	*Awaous banana*		T	No	No
Southern coastal waters; clear water with slow to moderate current, sandy or hard bottom, and little or no vegetation; also enters brackish and ocean waters					
Smalltooth sawfish	*Pristis pectinata*	LE	E	No	No
different life history stages have different patterns of habitat use; young found very close to shore in muddy and sandy bottoms, seldom descending to depths greater than 32 ft (10 m); in sheltered bays, on shallow banks, and in estuaries or river mouths; adult sawfish are encountered in various habitat types (mangrove, reef, seagrass, and coral), in varying salinity regimes and temperatures, and at various water depths, feed on a variety of fish species and crustaceans					
MAMMALS					
Coues' rice rat	*Oryzomys couesi*		T	No	No
cattail-bulrush marsh with shallower zone of aquatic grasses near the shoreline; shade trees around the shoreline are important features; prefers salt and freshwater, as well as grassy areas near water; breeds April-August					
Jaguarundi	*Herpailurus yaguarondi*	LE	E	No	No
thick brushlands, near water favored; 60 to 75 day gestation, young born sometimes twice per year in March and August, elsewhere the beginning of the rainy season and end of the dry season					
Ocelot	*Leopardus pardalis*	LE	E	No	No
dense chaparral thickets; mesquite-thorn scrub and live oak mottes; avoids open areas; breeds and raises young June-November					
Southern yellow bat	*Lasiurus ega*		T	No	No
associated with trees, such as palm trees (Sabal mexicana) in Brownsville, which provide them with daytime roosts; insectivorous; breeding in late winter					
West Indian manatee	*Trichechus manatus*	LE	E	No	No
Gulf and bay system; opportunistic, aquatic herbivore					
White-nosed coati	*Nasua narica*		T	No	No
woodlands, riparian corridors and canyons; most individuals in Texas probably transients from Mexico; diurnal and crepuscular; very sociable; forages on ground and in trees; omnivorous; may be susceptible to hunting, trapping, and pet trade					
MOLLUSKS					
False spike mussel	*Quadrula mitchelli*		T	No	No

Common Name	Scientific Name	Federal Status	State Status	Habitat Present On-site?	Effect / Impact?
possibly extirpated in Texas; probably medium to large rivers; substrates varying from mud through mixtures of sand, gravel and cobble; one study indicated water lilies were present at the site; Rio Grande, Brazos, Colorado, and Guadalupe (historic) river basins					
Salina mucket	*Potamilus metnecktayi*		T	No	No
lotic waters; submerged soft sediment (clay and silt) along river bank; other habitat requirements are poorly understood; Rio Grande Basin					
Texas hornshell	*Popenaias popeii*	C	T	No	No
both ends of narrow shallow runs over bedrock, in areas where small-grained materials collect in crevices, along river banks, and at the base of boulders; not known from impoundments; Rio Grande Basin and several rivers in Mexico					
REPTILES					
Atlantic hawksbill sea turtle	*Eretmochelys imbricata*	LE	E	No	No
Gulf and bay system, warm shallow waters especially in rocky marine environments, such as coral reefs and jetties, juveniles found in floating mats of sea plants; feed on sponges, jellyfish, sea urchins, mollusks, and crustaceans, nests April through November					
Black-striped snake	*Coniophanes imperialis*		T	No	No
extreme south Texas; semi-arid coastal plain, warm, moist micro-habitats and sandy soils; proficient burrower; eggs laid April-June					
Green sea turtle	*Chelonia mydas*	LT	T	No	No
Gulf and bay system; shallow water seagrass beds, open water between feeding and nesting areas, barrier island beaches; adults are herbivorous feeding on sea grass and seaweed; juveniles are omnivorous feeding initially on marine invertebrates, then increasingly on sea grasses and seaweeds; nesting behavior extends from March to October, with peak activity in May and June					
Keeled earless lizard	*Holbrookia propinqua*			No	No
coastal dunes, barrier islands, and other sandy areas; eats insects and likely other small invertebrates; eggs laid underground March-September (most May-August)					
Kemp's Ridley sea turtle	*Lepidochelys kempii*	LE	E	No	No
Gulf and bay system, adults stay within the shallow waters of the Gulf of Mexico; feed primarily on crabs, but also snails, clams, other crustaceans and plants, juveniles feed on sargassum and its associated fauna; nests April through August					
Leatherback sea turtle	*Dermochelys coriacea*	LE	E	No	No
Gulf and bay systems, and widest ranging open water reptile; omnivorous, shows a preference for jellyfish; in the US portion of their western Atlantic nesting territories, nesting season ranges from March to August					
Loggerhead sea turtle	*Caretta caretta*	LT	T	No	No
Gulf and bay system primarily for juveniles, adults are most pelagic of the sea turtles; omnivorous, shows a preference for mollusks, crustaceans, and coral; nests from April through November					
Northern cat-eyed snake	*Leptodeira septentrionalis septentrionalis*		T	No	No
Gulf Coastal Plain south of the Nueces River; thorn brush woodland; dense thickets bordering ponds and streams; semi-arboreal; nocturnal					
Speckled racer	*Drymobius margaritiferus*		T	No	No

Common Name	Scientific Name	Federal Status	State Status	Habitat Present On-site?	Effect / Impact?
Extreme south Texas; dense thickets near water, Texas palm groves, riparian woodlands; often in areas with much vegetation litter on ground; breeds April-August					
Texas horned lizard	*Phrynosoma cornutum*		T	No	No
Open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September					
Texas indigo snake	*Drymarchon melanurus erebennus*		T	No	No
Texas south of the Guadalupe River and Balcones Escarpment; thornbush-chaparral woodlands of south Texas, in particular dense riparian corridors; can do well in suburban and irrigated croplands if not molested or indirectly poisoned; requires moist microhabitats, such as rodent burrows, for shelter					
Texas scarlet snake	*Cemophora coccinea lineri*		T	No	No
Mixed hardwood scrub on sandy soils; feeds on reptile eggs; semi-fossorial; active April-September					
Texas tortoise	*Gopherus berlandieri*		T	No	No
Open brush with a grass understory is preferred; open grass and bare ground are avoided; when inactive occupies shallow depressions at base of bush or cactus, sometimes in underground burrows or under objects; longevity greater than 50 years; active March-November; breeds April-November					
PLANTS					
South Texas ambrosia	*Ambrosia cheiranthifolia*	LE	E	No	No
Grasslands and mesquite-dominated shrublands on various soils ranging from heavy clays to lighter textured sandy loams, mostly over the Beaumont Formation on the Coastal Plain; in modified unplowed sites such as railroad and highway ROWs, cemeteries, mowed fields, erosional areas along small creeks; flowering July-November					
Star cactus	*Astrophytum asterias*	LE	E	No	No
Gravelly clays or loams, possibly of the Catarina Series (deep, droughty, saline clays), over the Catahoula and Frio formations, on gentle slopes and flats in sparsely vegetated openings between shrub thickets within mesquite grasslands or mesquite-blackbrush thorn shrublands; plants sink into or below ground during dry periods; flowering from mid March-May, may also flower in warmer months after sufficient rainfall, flowers most reliably in early April; fruiting mid April-June					
Texas ayenia	*Ayenia limitaris*	LE	E	No	No
Subtropical thorn woodland or tall shrubland on loamy soils of the Rio Grande Delta; known site soils include well-drained, calcareous, sandy clay loam (Hidalgo Series) and neutral to moderately alkaline, fine sandy loam (Willacy Series); also under or among taller shrubs in thorn woodland/thorn shrubland; flowering throughout the year with sufficient rainfall					

E = State Listed Endangered
LE = Federal Listed Endangered
T = State Threatened
DL = Delisted

In addition, the Texas Natural Diversity Database (TxNDD) was researched for possible rare species occurrences in the project area. The TxNDD includes geo-referenced findings for rare species sightings with varying confidence levels (with regard to geographic placement of the sighting). These records are referred to as Elements of Occurrence Records (EORs). No sightings of designated threatened or endangered species are mapped within the project area. The project is overlapped by a broad area of two rare species sightings: the "rare" Mexican Mud Plantain and "state-threatened" South Texas siren (large form) (*Siren sp 1)*.

No Action Alternative – If this alternative was selected, there would be no potential to impact habitat that may support state threatened amphibian species (see below) or any other state or federally listed species.

Proposed Action Alternative – The existing irrigation channel at the southern project extent may provide suitable habitat for several state-threatened amphibian species: Black-spotted newt (*Notophthalmus meridionalis),* Mexican treefrog (*Smilisca baudinii),* South Texas siren (large form) (*Siren sp 1)*, and White-lipped frog (*Leptodactylus fragilis).* Although these species have a "state-threatened" designation by the TPWD, they do not have a federal listing status and are afforded no protection by the Endangered Species Act. Despite the lack of a federal endangered status, measures to avoid or minimize disturbances to moist habitat along the irrigation channel should be considered, where practical.

Based on the scope of work, on the habitat requirements for state and federally listed species, and on the habitat available at the project site, FEMA has determined that the Proposed Action will have no effect on federally listed threatened or endangered species.

Coordination letters soliciting agency comments were submitted to the TPWD Wildlife Habitat Assessment Program and the USFWS on April 1, 2011. Although the TPWD TxNDD provided EOR data on April 14, 2011, comments from separate coordination with the TPWD Wildlife Habitat Assessment Program and the USFWS have not been received.

Critical Habitat – "Critical habitat" is a term defined and used in the Endangered Species Act. According to the USFWS, "It is a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection." Review of the USFWS internet-based Critical Habitat Mapper indicates that no critical habitat occurs within the project limits.

No Action Alternative – Potential impacts to critical habitat are the same for the No Action Alternative as they are for the Proposed Action Alternative. That is, no critical habitat exists in the project area; therefore, no effects on such habitat will occur.

Proposed Action Alternative – No critical habitat exists in the project area; therefore, no short- or long-term impacts will occur. No mitigation measures are planned for critical habitat.

4.4.2 Migratory Birds, Wildlife and Fish

The Migratory Bird Treaty Act (MBTA) of 1918 implemented the 1916 convention between the United States and Great Britain for the protection of birds migrating between the U.S. and Canada. Similar conventions between the United States and other countries further expanded the scope of international protection of migratory birds. The MBTA makes it illegal for people to

"take" migratory birds, their eggs, feathers or nests. “Take” is defined in the MBTA to include by any means or in any manner, any attempt at hunting, pursuing, wounding, killing, possessing or transporting any migratory bird, nest, egg, or part thereof.

Migratory birds may cross the project area during construction. However, the presence of these birds would be incidental, and they would likely only use the project location as a stopover site for rest or water consumption (i.e. at the irrigation ditch at south end of the project). These birds would likely leave the site and occupy adjacent or nearby areas as construction equipment approaches. The proposed project area consists of a landscape that has been converted to residential and transportation uses with surrounding agricultural land.

No Action Alternative – Under the No Action Alternative, no construction would occur and there would be no impacts to general wildlife, fish, or migratory birds.

Proposed Action Alternative – The project is not expected to result in short- or long-term impacts to wildlife, fish, or migratory birds. This is primarily due to the current condition of the immediate and surrounding project area, which has been previously converted to residential, transportation, and agricultural uses. Based on these existing conditions, wildlife is limited if present at all. No streams, creeks, or watercourses would be impacted; therefore, impacts to fish would not occur. No mitigation measures are proposed for migratory birds wildlife or fish.

4.5 Cultural Resources

Cultural resources are structures, buildings, archeological sites, districts (a collection of related structures buildings, and/or archeological sites), cemeteries and objects listed in or eligible for listing in the National Register of Historic Places (NRHP). Both federal and state laws require coordination of cultural resources during project planning. At the federal level, NEPA and the National Historic Preservation Act (NHPA) of 1966, among others apply to federal projects. In addition, state laws such as the Antiquities Code of Texas apply to these projects. Compliance with these laws requires coordination with the Texas Historical Commission (THC)/Texas State Historic Preservation Officer (SHPO) and/or federally recognized tribes to determine the project’s effects on cultural resources. The area of potential effect (APE) is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. The proposed project APE for historical resources is 150 feet from the limits of the proposed project site. The APE for archeological resources is defined as the approximate 24-acres encompassing the project area.

4.5.1 Historic Properties

Historic Resources

A review of the NRHP, the list of State Archeological Landmarks (SAL), and the list of Recorded Texas Historical Markers indicates that no properties within the APE are listed in the NRHP. However, the APE is located within a designated historic district: the Louisiana–Rio Grande Canal Company Irrigation System. Established in 1914, the district consists of a network of irrigation canals built in the early 20th century.

A study of irrigation maps and aerials determined that no drainage or irrigation features are located within the APE. Other than the location of the APE within a designated National

Register District, no sites, including those listed or potentially eligible for listing in the NRHP or designated SALs, occur within or adjacent to the boundaries of the project site (THC 2011). No historically significant properties have been previously documented within the APE. There are no Official Texas Historical Markers located within the project's APE. In a July 14, 2009, letter, the THC determined that no historic properties would be affected by the proposed project (see **Appendix B**).

Archeological Resources

Background research included accessing the THC's Historic and Archeological Sites Atlas (2011) and consulting survey reports, site files, and maps on file at the Texas Archeological Research Laboratory (TARL) in Austin, TX. These resources were examined by Archaeologist, qualified under the *Secretary of the Interior's Professional Qualification Standards* (36 CFR Part 61) for archaeology, to identify previously recorded sites and past investigations within the vicinity of the project area.

The project site is located within a National Register District, the "Louisiana–Rio Grande Canal Company Irrigation System". While no previously recorded archeological sites have been recorded within the APE, the APE has not been previously surveyed for cultural resources. One previously recorded site, the McAllen Main Canal, is located within a one mile radius of the APE--approximately less than a half a mile west of the project site. A section of the same canal and associated sub-structures features was recorded as site 41HG225 and is found approximately one quarter of a mile north of the project site (THC 2011).

Although several surveys have been performed in the vicinity of the project area, the APE has not been not been previously surveyed for cultural resources. In 1980, the Galveston Corps of Engineers performed two surveys on 100 acres approximately one mile south of the project site and the Federal Highway Administration (FHWA) performed a linear survey adjacent and east of the project site (the date of the FHWA survey was not available on the Atlas). No sites were recorded as a result of the FHWA survey.

Other than the project area being located within the boundaries of a National Register District, no sites, including those listed or potentially eligible for listing in the NRHP or designated SALs, occur within or adjacent to the boundaries of the APE (THC 2011).

No Action Alternative – Under the No Action Alternative, the potential to encounter archeological deposits would not exist.

Proposed Action Alternative – Due to previous disturbances related to past construction in the APE, the Proposed Action Alternative has a low probability of affecting intact archeological deposits. No additional archeological work is recommended. Based on the scope of work, research presented above on the project site, and correspondence with SHPO, FEMA has determined that the Proposed Action Alternative will have no effect on historic properties

In the event that archeological deposits, including any Native American pottery, stone tools, bones, or human remains, are uncovered, the project shall be halted and the applicant shall stop all work immediately in the vicinity of the discovery and take reasonable measures to avoid or minimize harm to the finds. All archeological findings will be secured and access to the sensitive area restricted. The applicant will inform FEMA immediately and FEMA will consult with the SHPO. Work in sensitive areas cannot resume until FEMA determines that

consultation is completed and appropriate measures have been taken to ensure that the project is in compliance with the NHPA.

4.6 Socioeconomic Resources

4.6.1 Environmental Justice

On February 11, 1994, President Clinton signed (E.O.) 12898, which directs each federal agency to make achievement of environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high adverse human health, environmental, economic and social effects of its programs, policies, and activities on minority and low-income populations, particularly when such analysis is required by NEPA. The E.O. emphasizes the importance of NEPA's public participation process, and directs that each Federal agency must provide opportunities for community input in the NEPA process. Agencies must also identify potential effects and mitigation measures in consultation with affected communities, requiring agencies to work to ensure effective public participation and access to information. Therefore, each federal agency should translate crucial public documents, notices and hearings, relating to human health or the environmental for limited English speaking populations when it is practical and appropriate (FEMA 2011).

Although the proposal is not a transportation project, as a reference, the U.S. Department of Transportation (USDOT) Order on Environmental Justice (April 1997) defines a "minority" as a person who is Black, Hispanic, Asian American, or American Indian/Alaskan Native. "Minority population" is defined as "any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed DOT program, policy or activity." Block data indicate that minorities live in the project area.

Table 2. Minority Population Data

Census Geographies[1]	Total Population	Not Hispanic or Latino[2]					Hispanic or Latino (All Races)[2]
		Black/ African American	American Indian/ Alaska Native	Asian	Native Hawaiian/ Pacific Islander	Other[3]	
Block Groups (Comparison Area)							
48-215-20503-3	1,257	0	2	2	0	0	1,239 (99%)
48-215-21202-2	2,317	20	6	91	0	12	1,681 (73%)
Blocks (Project Area)							
48-215-20503-3-3000	149	0	0	0	0	0	149 (100%)
48-215-20503-3-3040	67	0	0	0	0	0	66 (99%)
48-215-20503-3-3041	42	0	0	0	0	0	42 (100%)
48-215-20503-3-3042	4	0	0	0	0	0	4 (100%)
48-215-21202-2-2041	6	0	0	0	0	0	6 (100%)

Source: U.S. Census 2000 SF1 Table P8
1. Small area Census geographies are named by their FIPS codes (State FIPS-County FIPS-Tract FIPS-Block group FIPS & Block FIPS).
2. The U.S. Census 2000 considers race and ethnicity to be separate identities. SF1 Table P8 provides race data by "Hispanic or Latino" and "Not Hispanic or Latino" ethnicities.
3. Combines Census Table P8 categories 'Some other race alone' and 'Two or more races

The table above shows that all five census Blocks had populations exceeding 50 percent of the total population for which race was determined. Further, the percent Hispanic population in the project area Blocks (99.8 percent) is on the order of, and 13.8 percent higher than that of the comparison areas, which averaged 86 percent.

The USDOT Order on Environmental Justice (April 1997) defines "low income" as a person whose median household income is at or below the Department of Health and Human Services (DHHS) poverty guidelines. "Low income population" is defined as "any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed DOT program, policy or activity." The 2011 DHHS poverty guideline for a family or household of four is $22,350. Data in the Income Data table were collected in 1999, and the 1999 DHHS poverty guideline for a family or household of four is $16,700. Block group data show that the median household income in 1999 for all block groups is greater than the 1999 DHHS poverty guideline. However, the data indicate that low income individuals live in the project area.

Table 3. Income Data

Census Geographies[1]	Total Households	% of households with annual incomes			Median Household Income in 1999
		Less than $14,999 (%)	Between $15,000 - $19,999 (%)	Greater than $20,000 (%)	
Tracts (Comparison Area)					
48-215-20503	1,583	31.1	10.7	58.2	$24,520
48-215-21202	1,303	14.7	7.4	77.9	$46,292
Block Groups (Project Area)					
48-215-20503-3	257	25.7	10.1	64.2	$23,466
48-215-21202-2	738	14.8	6.6	78.6	$45,521

Source: U.S. Census 2000 SF3 Table P52, P53

[1] Small area Census geographies are named by their FIPS codes (State FIPS-County FIPS-Tract FIPS-Block group FIPS & Block FIPS).

The table above shows that median household income in the project area Block Groups (avg. $34,494) is less than that of the comparison areas Tracts (avg. $35,406). This suggests that the project area populations would not be disproportionately adversely affected by the proposal.

Table 4. Poverty Data

Census Geographies[1]	Total: Population for whom poverty status is determined	Population with Income in 1999 below poverty level (%)
Tracts (Comparison Area)		
48-215-20503	7,217	34.3%
48-215-21202	3,370	16.5%
Block Groups (Project Area)		
48-215-20503-3	1,258	51.5%
48-215-21202-2	2,147	15.7%

Source: U.S. Census 2000 SF3 Table P87
[1] Small area Census geographies are named by their FIPS codes (State FIPS-County FIPS-Tract FIPS & Block group FIPS).

No Action Alternative – Under the No Action Alternative, no construction would occur and there would be no positive impacts to Environmental Justice communities. Residents in the area would still be exposed to flooding hazards.

Proposed Action Alternative – Although minority populations were identified, no residential or commercial displacements will occur. There are no anticipated adverse economic impacts on the area surrounding the project site due to this project. The project is intended to benefit the affected community by providing improved water supply infrastructure; therefore, it is anticipated that a positive impact to low income and minority populations would result.

Measures to include minority and low-income populations in the decision making process will include making Spanish language translation available during proposed public involvement activities.

A Socioeconomic/Minority Populations Map is included as **Figure 5**.

4.6.2 Hazardous Materials

A windshield survey for hazardous materials was conducted in the immediate site vicinity. No evidence of adjacent land uses posing adverse environmental risk to the project area was noted. Two large above-ground storage tanks (ASTs) were noted. According to an area resident, these ASTs serve as temporary holding tanks for ground well water that is sold to local residents by the subdivision owner. The field visit revealed a former gasoline fueling station, which is currently addressed at 6416 South 10th Street (at the South 11th Street intersection). The property does not have a current apparent use. No monitoring wells were observed on this property, but underground storage tanks may exist on the property. This facility did not appear in the hazardous materials database search (see below). In addition, TCEQ indicated that the facility at 6416 South 10th was not registered with the agency. TCEQ found no indication of a leaking petroleum storage tank site or evidence of an Incident Report or a Release Determination Report in TCEQ databases for this address (Anton Rozsypal, P.E., TCEQ Remediation Division, communication dated July 5, 2011). Jaime Garza, Section Manager for Air, Water, and Waste Programs, TCEQ Region 15 confirmed on August 2, 2011, that there was no record of underground storage tanks for the subject property at 6416 South 10th. The site is not registered with the TCEQ and there have been no investigations conducted by the TCEQ at this site.

The hazardous materials radius search was conducted on April 7, 2011 (Banks 2011). This search included multiple state and federal regulatory databases, including those held at the TCEQ. No mapped findings were identified. One "unmapped" finding was identified on the Emergency Response Notification System (ERNS). This facility is described as Airport International Motel. No motel facilities were observed in the project area.

No Action Alternative – Under the No Action Alternative, no construction would occur and there would be no potential to encounter hazardous materials during construction.

Proposed Action Alternative – Based on coordination with TCEQ, underground storage tanks and contamination are not anticipated at the project site. In the event of an unanticipated discovery of affected soils or other hazardous materials, the contractor will handle, manage, and dispose of petroleum products, hazardous materials and toxic waste in accordance to the requirements and to the satisfaction of the governing local, state and federal agencies. Unusable equipment, debris, and material shall be disposed of in an approved manner and location.

4.6.3 Noise

The project is located in a rural residential setting with adjacent transportation rights-of-way, agricultural fields, and commercial uses. Existing noise levels reflect this land use. Existing noise levels in the immediate project vicinity are likely a result of light traffic on South 10th Street, as well as light traffic on local roads within the existing subdivision. Noise receivers in the project area include adjacent residential dwellings and associated outdoor activity areas (e.g. backyards, etc.).

A noise impact is generally a concern if a receiver (e.g. residence, school, church, library, etc.) intercepts that noise. With the exception of residences within the Retiree Haven Subdivision, no sensitive receivers such as churches, schools, libraries, daycare centers, or nursing homes were observed on adjoining properties.

No Action Alternative – Under the No Action Alternative, no construction would occur and there would be no noise impacts.

Proposed Action Alternative – The primary short-term noise impacts associated with this alternative would occur during site preparation and construction activities. Any short-term elevations in ambient noise levels would primarily be a result of engine noise from construction equipment moving around the site. This noise would cease upon completion of construction activities. According to the City of McAllen, Capital Projects Engineer, the pumping station will likely involve pumping apparatuses very similar to a sanitary sewer lift station, where pumps would be located at the bottom of a wet well, fully submerged, when in operation. Therefore, long-term noise generated from the pumps would be minimal, and is not expected to be a nuisance to nearby residents.

To reduce noise levels during that period, construction activities must take place during normal business hours. Equipment and machinery installed at the proposed project site mustmeet all local, state, and federal noise regulations.

4.6.4 Traffic

The Retiree Haven subdivision is bordered on the right by SH 336 (South 10th St.). Properties within the subdivision are accessed by three local roads including (from east to west) South 11th Street, Wanda Avenue, Vanessa Avenue, South 12th Street, and Zelda Avenue. SH 336 (South 10th St.) is a two-way, four-lane, asphalt-paved roadway with a center median and shoulders. Local roads within the subdivision are asphalt-paved with no curbs, gutters, sidewalks, or pavement markings. Access to the subdivisions directly from SH 336 (South 10th Street) is provided at Vanessa Avenue, South 11th Street (at two intersections), and Zelda Avenue.

No Action Alternative – Under the No Action Alternative, no construction would occur and there would be no short-term impacts to traffic. Under this alternative, continued flood events would cause continued damage to roads and related local traffic problems.

Proposed Action Alternative – Short-term traffic impacts could include temporary road closures and/or detours as needed to allow for mobility of construction equipment within and around the proposed construction areas. Long-term transportation impacts are not anticipated. Traffic resulting from the construction activities would be limited to periodic ingress/egress of construction equipment accessing the site. No long-term changes to adjacent roadways are anticipated. The project would not cause substantial modification of traffic patterns in the area, nor would it result in exceeded capacity of adjacent or nearby transportation facilities. The City of McAllen anticipates the need for a utility permit from the Texas Department of Transportation (TxDOT) to install the proposed force main within the SH 336 (South 10th St.) ROW, south from the subdivision, towards the IBWC's Main Floodway. In addition, driveway permits for impacts at intersections will be secured. Additional positive impacts would include increased accessibility for emergency vehicle traffic such as fire, police, ambulance services, etc.

To mitigate any temporary transportation impacts as a result of construction activities, the City of McAllen will implement a traffic plan, which will facilitate access through appropriate traffic control measures. These could include flagging personnel, detour signs, etc. The City of McAllen will allow continued access to individual properties within Retiree Haven Subdivision during the construction phase.

4.6.5 Public Service and Utilities

The City of McAllen anticipates that adjustments to existing water and/or sewer mains or other services within the existing roadways may be needed during construction. However, specific adjustments have not been identified at this stage.

No Action Alternative – Under the No Action Alternative, no construction would occur and there would be no impacts to public service and utilities.

Proposed Action Alternative – Short-term impacts to utilities could include intermittent disruption of utility services during the construction phase. Long-term impacts to public services and utilities would be positive, and will include increased protection of the local roadway system by reducing potential damage to pavement section from saturation (increased pavement life). This alternative will also reduce the potential for localized flooding which reduces potential undesirable inflow of stormwater into existing gravity sewer systems.

Additional positive impacts would include increased accessibility for emergency services such as fire, police, ambulance services, etc.

Measures to mitigate impacts to public services and utilities will include close coordination with the responsible utility companies or departments, as necessary. This will ensure continued operation of such services in order to minimize prolonged disruption of services to customers.

4.6.6 Public Health and Safety

The project would construct basic drainage infrastructure that will serve a residential community (i.e. curb and gutter, storm sewer network and related appurtenances, stormwater detention pond with pumping station, and outfall force main system). These features would convey stormwater after precipitation events. The project does not involve industrial processes, solid waste generation, liquid waste streams, or air emissions. Therefore, adverse impacts to public safety and welfare are not expected.

No Action Alternative – Under the No Action Alternative, no construction would occur and there would be no impacts to public health and safety. A No Action Alternative could impede access for emergency responders during a flood event.

Proposed Action Alternative – Since the project does not involve industrial processes, solid waste generation, liquid waste streams, or air emissions, adverse impacts to public safety and welfare are not expected from implementation of this alternative. Short-term safety risks to construction workers and the general public would be present during construction. To minimize risks to safety and human health, all construction activities will be performed using qualified personnel trained in the proper use of the appropriate equipment, including all appropriate safety precautions. The appropriate signage and barriers must be in place prior to construction activities to alert pedestrians and motorists of project activities. Long-term improvements to public safety are anticipated due to reduction in flood risk.

4.7 Summary Table

The following table summarizes the potential impacts of the Proposed Action Alternative and conditions or mitigation measures to offset those impacts.

Table 5. Proposed Action Alternative Summary Table

Affected Environment	Impacts	Agency Coordination/Permits	Mitigation
Geology and Soils	Construction activities would not be deep enough to impact underlying geologic resources in the short- or long-term. During construction, soils would be excavated and disturbed within proposed infrastructure footprints; however, these occur in areas that have been previously-converted to residential and transportation uses. No areas with current or planned farm uses would be affected.	A letter requesting project review was sent to the NRCS on April 1, 2011. In a response letter dated April 7, 2011, the agency states that "The soils at the proposed site may contain Important Farmland Soils; however, by the description of the area that describes service to the residential community, the work area has been previously converted to urban uses. The FPPA excludes from the definition of "Farmland" areas that have been previously converted to urban uses." The agency completed a Farmland Conversion Impact Rating (Form AD-1006) indicating the exemption.	Measure to mitigate soil disturbances will include standard erosion control measures to prevent sediment loading of surface waters. Excavated soil and waste materials will be managed and disposed of in accordance with applicable local, state, and federal regulations.
Air Quality	The proposed project could result in intermittent, short-term, fugitive emissions. Emissions from construction are not expected to cause or contribute to a violation of an applicable ambient air quality standard. Long-term impacts to air quality are not anticipated to result.	A letter requesting project review was sent to the TCEQ Office of Policy and Regulatory Development on April 1, 2011. In a response letter dated April 11, 2011, the agency stated that a "review of the project for General Conformity impact in accordance with 40 CFR Part 93 and Title 30, TAC § 101.30 indicates that the proposed action is located in the City of McAllen, Hidalgo County, which is currently unclassified or in attainment of the NAAQS for all six criteria air pollutants. Therefore, General Conformity does not apply." The agency further states that "although any demolition, construction, rehabilitation or repair project will produce dust and particulate emissions, these actions should pose no significant impact upon air quality standards.	Construction contractors will be required to water down construction areas to control dust when necessary. Fuel-burning equipment running times will be kept to a minimum and engines will be properly maintained.

Affected Environment	Impacts	Agency Coordination/Permits	Mitigation
Water Quality	Short-term impacts to surface water quality due to construction site runoff. No long-term impacts to water quality are anticipated.	A letter requesting project review was sent to the TCEQ Office of Policy and Regulatory Development on April 1, 2011. In a response letter dated April 11, 2011, the agency recommended that "the environmental assessment address actions that will be taken to prevent surface and groundwater contamination." These measures are summarized in the preceding paragraph.	To mitigate possible water quality impacts, prior to construction, the City of McAllen will prepare a SW3P and obtain a TPDES permit from the TCEQ. The SW3P will include appropriate control measures (i.e., BMPs) including erosion and sedimentation controls that will be implemented as part of the construction activity to control pollutants in stormwater discharges. Excavated soil and waste materials will be managed and disposed of in accordance with applicable local, state, and federal regulations. If contaminated materials are discovered during the construction activities, the work must cease until the appropriate procedures can be implemented and permits obtained.
Wetlands	No long-term impacts to waters of the U.S. (including wetlands) would occur as a result of the project. Short-term impacts during project installation to nearby wetlands.	Comments were solicited from the USACE Galveston District Regulatory Branch via written correspondence dated April 1, 2011 (**Appendix B**). A response has not been received.	The applicant must ensure that BMPs are implemented to prevent erosion and sedimentation to surrounding, nearby or adjacent wetlands. This includes equipment storage and staging of construction to prevent erosion and sedimentation to ensure that wetlands are not adversely impacted per the Clean Water Act and Executive Order 11990. Should work be conducted within a wetland, the applicant must ensure that there is no net loss of wetlands. Under EO11990 (Protection of Wetlands); the applicant is responsible for coordinating with and obtaining any required Section 404 Permit(s) from the USACE prior to initiating work. The applicant shall comply with all conditions of the required permit. All coordination pertaining to these activities should be documented and copies forwarded to the state and FEMA as part of the permanent project files.

Affected Environment	Impacts	Agency Coordination/Permits	Mitigation
Floodplains	Project would result in discharges to floodplain, but would not result in considerable changes to flood levels.	Comments were solicited from the FEMA Region VI Environmental Office via written correspondence dated April 1, 2011 (**Appendix B**). A response was received on May 24, 2011 and the agency provided the contact information for the local floodplain administrator.	Applicant will avoid the placement of construction and equipment staging areas within the 100-year floodplain. The applicant must coordinate with the local floodplain administrator and obtain required permits prior to initiating work. All coordination pertaining to these activities and applicant compliance with any conditions should be documented and copies forwarded to the state and FEMA for inclusion in the permanent project files. The applicant is responsible for providing the public with the finding and explanation of any final decision that the floodplain is the only practicable alternative at least 15 days prior to initiating work. This notification should be documented and copies forwarded to the state and FEMA for inclusion in the permanent project files.
Coastal Resources	No impacts.	Comments were solicited from the Texas CM Program via written correspondence dated April 1, 2011 (**Appendix B**). A response has not been received.	None.
Threatened and Endangered Species	Habitat for several state listed species may be impacted. There will be no effect to federally listed species.	Coordination letters soliciting agency comments were submitted to the TPWD Wildlife Habitat Assessment Program and the USFWS on April 1, 2011. Neither agency has responded. The TPWD TxNDD office was contacted via e-mail, and the office provided EOR data for rare species in the vicinity.	Disturbances to moist habitat along the irrigation channel should be considered, where practical to mitigate impacts to two rare species reported in the TxNDD: the “state-threatened” South Texas siren (large form).
Critical Habitat	No impacts.	Coordination letters soliciting agency comments were submitted to the TPWD Wildlife Habitat Assessment Program and the USFWS on April 1, 2011. Neither agency has responded.	None.
Wildlife and Fish	No impacts.	Coordination letters soliciting agency comments were submitted to the TPWD Wildlife Habitat Assessment Program and the USFWS on April 1, 2011. Neither agency has responded.	None.

Affected Environment	Impacts	Agency Coordination/Permits	Mitigation
Cultural Resources	No effect.	Cultural resources clearance for the project was obtained from the THC on July 14, 2009. A copy of the stamped letter dated June 15, 2009 is included in **Appendix B**.	In the event that archeological deposits, including any Native American pottery, stone tools, bones, or human remains, are uncovered, the project shall be halted and the applicant shall stop all work immediately in the vicinity of the discovery and take reasonable measures to avoid or minimize harm to the finds. All archeological findings will be secured and access to the sensitive area restricted. The applicant will inform FEMA immediately and FEMA will consult with the SHPO. Work in sensitive areas cannot resume until FEMA determines that consultation is completed and appropriate measures have been taken to ensure that the project is in compliance with the NHPA.
Environmental Justice	Positive impact.	N/A	Measures to include minority and low-income populations in the decision making process included Spanish language meeting notice, handouts, and available translation at a public hearing held on May 26, 2011.
Hazardous Materials	Undocumented releases of petroleum hydrocarbons associated with unreported releases may be encountered.	N/A	In the event of an unanticipated discovery of affected soils or other hazardous materials, the contractor will handle, manage, and dispose of petroleum products, hazardous materials and toxic waste in accordance to the requirements and to the satisfaction of the governing local, state and federal agencies. Unusable equipment, debris, and material shall be disposed of in an approved manner and location.
Noise	Short-term noise impacts during site preparation and construction activities. Long-term noise generated from the pumps would be minimal.	N/A	Construction activities must take place during normal business hours. Equipment and machinery installed at the proposed project site must meet all local, state, and federal noise regulations.

Affected Environment	Impacts	Agency Coordination/Permits	Mitigation
Traffic	Short-term traffic impacts could include temporary road closures and/or detours as needed to allow for mobility of construction equipment within and around the proposed construction areas. Long-term transportation impacts are not anticipated.	N/A	The City of McAllen will implement a traffic plan, which will facilitate access through appropriate traffic control measures.
Public Service and Utilities	Short-term impacts to utilities could include intermittent disruption of utility services during the construction phase. Long-term impacts to public services and utilities would be positive.	N/A	The City of McAllen will coordinate with the responsible utility companies or departments, as necessary to ensure continued operation of such services in order to minimize prolonged disruption of services to customers.
Public Health and Safety	Long-term positive impacts.	N/A	Construction activities will be performed using qualified personnel trained in the proper use of the appropriate equipment, including all appropriate safety precautions. The appropriate signage and barriers must be in place prior to construction activities to alert pedestrians and motorists of project activities.

5.0 Cumulative Impacts

According to CEQ regulations, cumulative impacts represent the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7)." In accordance with NEPA, and to the extent reasonable and practical, this EA considered the combined effect of the Proposed Action Alternative and other actions occurring or proposed in the vicinity of the proposed project site.

During the site visit, no obvious indications of area development or economic activity were noted. City of McAllen Planning Department was contacted on April 7, 2011 and May 2, 2011 to identify reasonably foreseeable actions in the study area that might contribute to a cumulative effect on area resources. According to Julianne R. Rankin, FAICP, Director of Planning for the City of McAllen, a proposed subdivision for industrial development called T-5 Industrial Park is located at 1501 Military Highway. According to a map provided by Ms. Rankin, the development is located approximately 0.25 miles northwest within an agricultural field apparently used in the past for row crops. It would be approximately 15 acres in size, and would therefore affect that many acres of agricultural land. Since the current project would not result in direct or indirect impacts to affect agricultural resources, it is not expected to contribute to a cumulative impact on agricultural resources. City of McAllen Planning Department correspondence is included in **Appendix B**.

The Retiree Haven Subdivision is already developed, and the proposed project is designed to protect existing residential structures from the effects of flooding. Undeveloped areas surrounding the project are mainly used for agriculture and transportation uses. Therefore, the proposed project should not encourage additional development in the project area since the land is already developed. Any development of area agricultural lands would be depended on the landowners' willingness to sell, which is too speculative to include as a reasonably foreseeable action. No cumulative impacts are anticipated.

6.0 Agency Coordination, Public Involvement and Permits

This section summarizes applicable agency coordination, public involvement, and required permits.

Agency Coordination

Table 6. Summary of Agency Coordination

Agency	Date Contacted	Response Received	Summary of Coordination
Coastal Coordination Council - Texas CMP	April 1, 2011	No Response	No Response
FEMA (Region VI)	April 1, 2011	May 24, 2011	See **Section 4.2.3** (Floodplains) for summary of this coordination.
NRCS (USDA)	April 1, 2011	April 7, 2011	See **Section 4.1.1** (Geology and Soils) for summary of this coordination.
TCEQ – Office of Policy and Regulatory Development	April 1, 2011	April 11, 2011	See **Section 4.1.2** (Air Quality) for summary of this coordination.
THC	June 15, 2009	July 14, 2009	See **Section 4.5** (Cultural Resources) for summary of this coordination.
TPWD – Natural Diversity Database (TxNDD)	April 5, 2011	April 14, 2011	TxNDD staff provided EOR data for the project vicinity.
TPWD – Wildlife Habitat Assessment Program	April 1, 2011	No Response	No Response
USACE	April 1, 2011	No Response	No Response
USFWS	April 1, 2011	No Response	No Response
City of McAllen Planning Department	April 7, 2011	May 16, 2011	Department provided information regarding nearby development.

Public Involvement

On Thursday, May 26, 2011, the City of McAllen Engineering department conducted a public hearing for the residents of the Retiree Haven subdivision to inform residents of the proposed project. Representing the City of McAllen were Ms. Yvette Barrera, P.E., CFM, City Engineer and Robert L. Canterbury, P.E., CFM, Capital Projects Engineer. Notice of the meeting was provided via hand-delivered letters to each residence. These notices were provided in both English and Spanish. The project was held in the Auditorium of the South Texas College Technical Campus at Military and Ware Road. Six residents of Retiree Haven attended the meeting. The meeting began at approximately 6:05 PM. The overall description of the project

was provided along with an explanation of the process of funding, design and construction. Posters showing the proposed improvements were displayed for meeting attendees to view.

Overall the project was very well received and all that were in attendance were in favor of the project. Two specific items of interest or concern were brought up. These included:

- Ms. B.J. Noser Ingram of 6400 S. 10th Street indicated that she was the owner of the two areas proposed as dry detention ponds. She indicated that these were originally dedicated to the City but that the City had given these areas back to her. She indicated she would be more than happy to sell these areas to the City if needed for the project. (City ROW staff will be requested to verify the accuracy of Ms. Ingram's position.) Additionally, a concern was raised as to the maintenance of the proposed ponds. Staff indicated that the City would be responsible for this infrastructure.

- Ms. Dora Alicia Funes of 6413 S. 12th Street expressed a concern about a potential increase of mosquitoes as a result of the construction of the ponds, since her property is adjacent to a pond. City staff explained that the potential for standing water after a storm event would be reduced from current conditions as a result of the improvements. The function of the system to collect the stormwater and keep it from ponding in undesirable locations throughout the subdivision was explained. The design of the dry ponds, including provisions for bleed-down using an underdrain system upstream of the outfall structure, was explained.

The meeting was adjourned at 7:00 PM. Public hearing materials are included in **Appendix D.**

A public notice advertising the availability of this Draft EA for public review and comment will be made available in a local newspaper. The draft EA will be available at both a local repository and at http://www.fema.gov/plan/ehp/envdocuments/ea-region6.shtm. A 30-day public comment period will commence on the initial date of the public notice. FEMA will consider and respond to all public comments in the Final EA.

Permits

Table 7. Summary of Anticipated Permits

Permit	Agency/Entity	Permit Description
License/Permit for Crossing IBWC Flood Control Projects and Rights-of-Way	IBWC	Project will require a license or permit from the International Boundary and Water Commission (IBWC) for proposed activities crossing or encroaching upon the floodplains of IBWC flood control projects and rights-of-way. The applicant must obtain licenses or permits from the IBWC prior to construction and must comply with all license or permit conditions. The applicant must maintain documentation of compliance with any IBWC license or permit.
Texas Pollution Discharge Elimination System Permit	TCEQ	The City of McAllen will obtain a TPDES CGP from the TCEQ. The SW3P will include appropriate control measures (i.e., BMPs) including erosion and sedimentation controls that will be implemented as part of the construction activity to control pollutants in stormwater discharges.
TxDOT ROW Utility Permit	TxDOT	The City of McAllen anticipates the need for a utility permit from the TxDOT to install the proposed force main within the SH 336 (South 10th St.) ROW, south from the subdivision, towards the IBWC's Main Floodway.

7.0 References

Banks Environmental Data. 2011. The Banks Regulatory Database Report. April 07, 2011.

Federal Emergency Management Agency (FEMA). 1982. Flood Insurance Rate Map (FIRM) Community Panel No. 480334 0400C. November 16, 1982

Federal Emergency Management Agency, 2011. *Executive Order 12898, Environmental Justice for Low Income and Minority Populations, 1994*. http://www.fema.gov/plan/ehp/ehplaws/ejeo.htm (Accessed May 2, 2011).

Texas Commission on Environmental Quality (TCEQ). 2011. http://www.tceq.texas.gov/assets/public/compliance/monops/water/10twqi/2010_303d.pdf (Accessed April 11, 2011).

Texas Historical Commission (THC). 2011. *Texas Historic and Archeological Sites Atlas*, http://nueces.thc.state.tx.us/, accessed March 23, 2011.

Texas Parks and Wildlife Department (TPWD). 2011. Rare, Threatened, and Endangered Species of Texas by County (Hidalgo County Data). Last Revision February 28, 2011. Accessed April 11, 2011.

Texas Water Development Board (TWDB). 2011. *Geologic Atlas of Texas, McAllen-Brownsville Sheet*. http://www.twdb.state.tx.us/GwRD/GTA/GAT/index.htm (Accessed May 2, 2011).

USDA/NRCS. 2009. Web Soil Survey. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx (Accessed April 11, 2011).

8.0 List of Preparers

Name/Title	Affiliation	Area of Input
Consultants		
Samuel Blanco, M.S. *Environmental Planner*	Raba-Kistner Consultants, Inc.	Principal document preparer. Land Use, floodplains, water quality, coastal resources, biological resources, air quality, noise, socioeconomic and environmental justice, transportation, construction impacts.
Pollyanna Held, M.A., RPH *Archaeologist*	Raba-Kistner Consultants, Inc.	Cultural Resources (Archeology and historic properties)
Mary Kelly, P.E. *Senior Environmental Planner*	Raba-Kistner Consultants, Inc.	Document Quality Assurance/Quality Control
Government Contributors		
Dorothy Weir, *Environmental Specialist*	FEMA Region 6	Document Review/Comment
Kevin Jaynes, CHMM, *Regional Environmental Officer*	FEMA Region 6	Document Review/Comment

FIGURES

APPENDIX A

PHOTOGRAPHS

APPENDIX B

AGENCY COORDINATION

APPENDIX C

EXECUTIVE ORDER 11988
8-STEP REVIEW

APPENDIX D

PUBLIC HEARING MATERIALS